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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,827	08/31/2001	Lawrence A. Clevenger	YOR9-2001-0245-US1	2814

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EXAMINER

PATEL, ISHWARBHAI B

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 08/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/943,827

Applicant(s)

CLEVENGER ET AL.

Examiner

Ishwar (I. B.) Patel

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 11-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2827

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1-10, drawn to an electronic device, is acknowledged.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the substrate 10 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because the figures are improperly cross hatched. All of the parts shown in section, and only those parts, must be cross hatched. The cross hatching patterns should be selected from those shown on page 600-114/115 of the MPEP based on the material of the part. See also 37 CFR 1.84(h)(3) and MPEP 608.02.

4. Figures 3 and 4 are not clear and difficult to read as reference numeral 81, marked in both the figures, is a material disposed on the top of the first electrode and on the substrate, forming second electrode.

Art Unit: 2827

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

The phrases "a second electrode material 81", "a second electrode material 80", "second electrode 80", "second electrode material 80,81", used in paragraphs 0031, 0032 and 0034, are totally confusing, as numeral are interchangeably used for second conductive material and second electrode.

This has further added confusion in reading claims 1 and 8 and figures 3 and 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-2, 4 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 8, "a second electrode disposed on top of said upper region of said first electrode" is not clear.

Art Unit: 2827

As described in the specification the second electrode material is disposed on top of the upper region of the first electrode, page 8, line 11-12, paragraph 0031.

Examiner interpreted claims 1 and 8, as "a second electrode material disposed on top of said upper region of said first electrode", considering the first electrode was made by using first electrode material to begin with, and further, in line with the above interpretation, in claim 4 "second electrode" is read as "second electrode material".

Regarding claim 4, it is not clear what is claimed by "conductive material". Are they electrically conductive or thermally conductive or both?

Further, regarding claims 2 and 8, it is not clear what is claimed by "a plurality of electrical connections". If they are different than the electrodes, they are not shown in the figures and if they are same, what additional structure is claimed by claiming, "a plurality of electrical connections", as the electrodes are already claimed?

Prior art applied to the extent it is understood by the examiner.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2827

9. Claims 1-5, 7-8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Goenka, US Patent No. 6,111,204.

Regarding claim 1, Goenka discloses an electrode device comprising:

a first electrode having an upper region wider than a lower region (middle layer on bond pad, made of second metal, see figure 8, column 2, line 64-65); and

a second electrode material disposed on top of said upper region of said first electrode (top layer made of first metal, see figure 8, column 2, line 61-63).

Regarding claim 2, Goenka further discloses a plurality of electrical connections, (conductive lines 20 and other electrodes, see figure 8).

Regarding claim 3, Goenka further discloses said upper region upwardly slopes from said lower region, see figure 8.

Regarding claim 8, Goenka discloses all the features of the claimed inventions including said upper region upwardly slopes from said lower region, as applied to claim 1-3.

Regarding claims 4 and 5, Goenka further discloses said first and second conductive materials are electrically conductive, as both are metal layer.

Art Unit: 2827

Regarding claims 7 and 10, Goenka further discloses second conductive material comprises copper, see column 3, line 55-65.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goenka, US Patent No. 6,111,204 as applied to claims 1-3, 5,7 and 10 above, and further in view of Tanamura et al, US Patent No. 6,306,559.

Regarding claim 6 and 9, the applicant is claiming said first conductive material comprises photoactive compounds, wherein said photoactive compounds comprise one of polyphenylenevinylene, polypyrrole, and polythiophene derivatives.

Though, Goenka fail to disclose such material, Tanamura discloses the use of electroconductive material, such as polypyrrole and polyparaphenylene or the like in the fabrication of an electrode, Tanamura, column 20, line 5-15, as the electroconductivity of the such polymer material can be varied to a desired degree.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the structure of Goenka with first conductive material comprises photoactive compounds, wherein said photoactive compounds

Art Unit: 2827

comprise polypyrrole, in order to have the flexibility to change the electroconductivity to desired value.

Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jung et al., discloses a chip package with connection pad having an upper region wider than a lower region.

Hosoi et al., discloses structure with metallized metal layer having an upper region wider than a lower region.

Hirata et al. and Mori et al., disclose meshed or interdigitated electrode structure.

Idaka et al., disclose a bump structure with trapezoidal cross section having an upper region wider than a lower region.

Kiittner et al., disclose a thin film circuit with multiple layers.

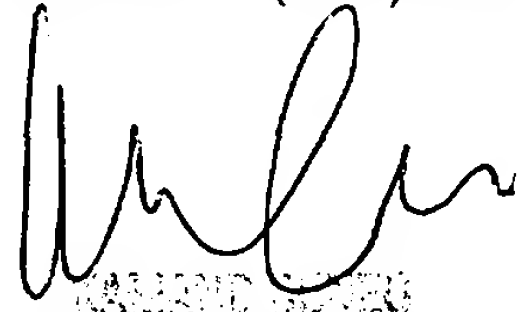
Rinne discloses bump structure with an upper region wider than a lower region.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (8:30 - 5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on (703) 305 9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

ibp
August 9, 2003


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